

Remarks

The various parts of the Office Action and other matters are discussed below under appropriate headings.

Specification

The specification has been amended to correct the related application data. This application is a division of the parent application, as is reflected on the filing receipt issued on this application.

In addition, Formula III at page 12, line 20, has been corrected in the same manner it was corrected in the parent application.

Claim Rejections - 35 USC § 112

Claims 57 and 58 were rejected as being indefinite for want of antecedent basis for "the semiconductor device". The rejection is now moot in view of the amendments to claims 57 and 58 where reference is now made to a "pre-cursor to a semiconductor device", clear antecedent basis existing in claim 56.

Claim Rejections - 35 USC § 102 and § 103

In view of the meaning of the term "contiguous" as expressed by the Examiner, claim 43 has been amended to specify that the overcoat layer has portions thereof overlying the second material in respective said regions bordered by the sacrificial material, and said portions extending below the height of the adjacent sacrificial material. As should be evident from an examination of Figure 5C of Havemann et al., it is not possible for the layer 20 to extend into the regions bounded by the sacrificial material which contain the conductive leads 16, as this is precluded by the presence of the oxide material 28. Accordingly, for at least this reason the rejection of claim 43 and the claims dependent therefrom should be withdrawn.

For related reasons, the rejection of claim 56 and the claims dependent therefrom should be withdrawn. Claim 56 now recites an overcoat layer having a portion thereof overlying the conductive material in a region bordered by the sacrificial material, and said portion extending below the height of the adjacent sacrificial material.

Newly added claims 59-71 also define patentably over the teachings of Havemann et al. For instance, claim 59 recites a semiconductor device comprising a substrate, a patterned layer of conductive material disposed on the substrate and

having a region thereof bordered by air gaps, and an overcoat layer overlying the patterned layer of conductive material and the air gap, the overcoat layer having a portion thereof overlying the conductive material in the region bordered by the air gaps, and said portion extending below the height of the adjacent air gaps. In the device shown in Fig. 5D of Havemann et al., the portions of the overcoat layer 20 overlying the conductive leads 16 cannot extend to height below the height of the air gaps because of the presence of the oxide material 28.

New claim 67 recites a semiconductor device comprising a substrate, a patterned layer of conductive material disposed on the substrate and having a region thereof bordered by air gaps, and an overcoat layer overlying the patterned layer of conductive material and the air gap, the overcoat layer having a portion thereof overlying the conductive material in the region bordered by the air gaps, and wherein a surface of the conductive material adjacent a respective air gap is covered by a film of non-conducting material that does not extend over the conductive material beyond the air gap. Support for the recitation of such film can be found on page 19, lines 17-22, of the specification. As there discussed, a film can be formed by residue from the decomposition of a sacrificial material, and consequently the film will not extend over the conductive material beyond the air gap. According to Havemann et al., the metal leads can be covered by a passivating layer 26, but such layer extends over the conductive leads beyond the air gap (Havemann et al., column 6, lines 33-42).


In view of the foregoing, the other contentions made by the Examiner in the last Office Action need not be discussed as they are now moot.

Conclusion

This application is now in condition for allowance and an early issuance of a notice of allowance is earnestly solicited.

Respectfully submitted,

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Date: May 19, 2003

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